

AMENDMENTS TO THE CLAIMS:

Claims 1-67, 78-85, 96-103, 114-121, 132-139 are cancelled. Claim 68, 86, 104 and 122 have been amended. Claims 140-155 are added. The following is the status of the claims of the above-captioned application, as amended.

Claims 1-67 (Cancelled.)

68. (Currently amended) A variant of a parent alpha-amylase enzyme, wherein said parent alpha-amylase has an amino acid sequence which has at least 80% homology to SEQ ID NO:3, and wherein said variant has alpha-amylase activity, has at least 80% identity to said parent alpha-amylase and comprises deletions at positions equivalent to positions 180 and 181 in SEQ ID NO:3 ~~(using SEQ ID NO:3 for numbering)~~.

69. (Previously presented) The variant of claim 68, wherein said parent alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

70. (Previously presented) The variant of claim 68, wherein said parent alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

71. (Previously presented) The variant of claim 68, wherein said parent alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

72. (Previously presented) The variant of claim 68, wherein said variant further comprises amino acid substitutions of a cysteine at positions equivalent to positions 349 and 428 in SEQ ID NO:3.

73. (Previously presented) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 80% homology to SEQ ID NO:3, modified by having deletions at positions equivalent to positions 180 and 181 in SEQ ID NO:3.

REST AVAILABLE COPY

74. (Previously presented) An isolated alpha-amylase comprising an alpha-amylase of claim 73 having amino acid substitutions of cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3.

75. (Previously presented) The alpha-amylase of claim 73, wherein said alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

76. (Previously presented) The alpha-amylase of claim 73, wherein said alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

77. (Previously presented) The alpha-amylase of claim 73, wherein said alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

Claims 78-85 (Cancelled.)

86. (Currently amended) A variant of a parent alpha-amylase enzyme, wherein said parent alpha-amylase has an amino acid sequence which has at least 80% homology to SEQ ID NO:3, and wherein said variant has alpha-amylase activity, has at least 80% identity to said parent alpha-amylase and comprises deletions at positions equivalent to positions 179 and 181 in SEQ ID NO:3 ~~(using SEQ ID NO:3 for numbering)~~.

87. (Previously presented) The variant of claim 86, wherein said parent alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

88. (Previously presented) The variant of claim 86, wherein said parent alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

89. (Previously presented) The variant of claim 86, wherein said parent alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

90. (Previously presented) The variant of claim 86, wherein said variant further comprises amino acid substitutions of a cysteine at positions equivalent to positions 349 and 428 in SEQ ID NO:3.

91. (Previously presented) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 80% homology to SEQ ID NO:3, modified by having deletions at positions equivalent to positions 179 and 181 in SEQ ID NO:3.

92. (Previously presented) An isolated alpha-amylase comprising an alpha-amylase of claim 91 having amino acid substitutions of cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3.

93. (Previously presented) The alpha-amylase of claim 91, wherein said alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

94. (Previously presented) The alpha-amylase of claim 91, wherein said alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

95. (Previously presented) The alpha-amylase of claim 91, wherein said alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

Claims 96-103 (Cancelled.)

104. (Currently amended) A variant of a parent alpha-amylase enzyme, wherein said parent alpha-amylase has an amino acid sequence which has at least 80% homology to SEQ ID NO:3, and wherein said variant has alpha-amylase activity, has at least 80% identity to said parent alpha-amylase and comprises deletions at positions equivalent to positions 179 and 182 in SEQ ID NO:3 (using SEQ ID NO:3 for numbering).

105. (Previously presented) The variant of claim 104, wherein said parent alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

106. (Previously presented) The variant of claim 104, wherein said parent alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

107. (Previously presented) The variant of claim 104, wherein said parent alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

108. (Previously presented) The variant of claim 104, wherein said variant further comprises amino acid substitutions of a cysteine at positions equivalent to positions 349 and 428 in SEQ ID NO:3.

109. (Previously presented) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 80% homology to SEQ ID NO:3, modified by having deletions at positions equivalent to positions 179 and 182 in SEQ ID NO:3.

110. (Previously presented) An isolated alpha-amylase comprising an alpha-amylase of claim 109 having amino acid substitutions of cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3.

111. (Previously presented) The alpha-amylase of claim 109, wherein said alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

112. (Previously presented) The alpha-amylase of claim 109, wherein said alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

113. (Previously presented) The alpha-amylase of claim 109, wherein said alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

Claims 114-121 (Cancelled.)

122. (Currently amended) A variant of a parent alpha-amylase enzyme, wherein said parent alpha-amylase has an amino acid sequence which has at least 80% homology to SEQ ID NO:3, and wherein said variant has alpha-amylase activity, has at least 80% identity to said parent alpha-amylase and comprises deletions at positions equivalent to positions 180 and 182 in SEQ ID NO:3 ~~(using SEQ ID NO:3 for numbering)~~.

123. (Previously presented) The variant of claim 122, wherein said parent alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

124. (Previously presented) The variant of claim 122, wherein said parent alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

125. (Previously presented) The variant of claim 122, wherein said parent alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

126. (Previously presented) The variant of claim 122, wherein said variant further comprises amino acid substitutions of a cysteine at positions equivalent to positions 349 and 428 in SEQ ID NO:3.

127. (Previously presented) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 80% homology to SEQ ID NO:3, modified by having deletions at positions equivalent to positions 180 and 182 in SEQ ID NO:3.

128. (Previously presented) An isolated alpha-amylase comprising an alpha-amylase of claim 127 having amino acid substitutions of cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3.

129. (Previously presented) The alpha-amylase of claim 127, wherein said alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

130. (Previously presented) The alpha-amylase of claim 127, wherein said alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

131. (Previously presented) The alpha-amylase of claim 127, wherein said alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

Claims 132-139. (Cancelled.)

140. (New.) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 90% homology to SEQ ID NO:3, modified by having a deletion at positions equivalent to positions 180 and 181 in SEQ ID NO:3.

141. (New.) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 95% homology to SEQ ID NO:3, modified by having a deletion at positions equivalent to positions 180 and 181 in SEQ ID NO:3.

142. (New) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 90% homology to SEQ ID NO:3, modified by having a deletion at positions equivalent to positions 179 and 181 in SEQ ID NO:3.

143. (New) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 95% homology to SEQ ID NO:3, modified by having a deletion at positions equivalent to positions 179 and 181 in SEQ ID NO:3.

144. (New.) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 90% homology to SEQ ID NO:3, modified by having a deletion at positions equivalent to positions 179 and 182 in SEQ ID NO:3.

145. (New.) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 95% homology to SEQ ID NO:3, modified by having a deletion at positions equivalent to positions 179 and 182 in SEQ ID NO:3.

146. (New.) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 90% homology to SEQ ID NO:3, modified by having a deletion at positions equivalent to positions 180 and 182 in SEQ ID NO:3.

147. (New.) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 95% homology to SEQ ID NO:3, modified by having a deletion at positions equivalent to positions 180 and 182 in SEQ ID NO:3.

148. (New.) A variant of a parent *Bacillus stearothermophilus* alpha-amylase, wherein the variant has an amino acid sequence which has at least 90% homology to the parent *Bacillus stearothermophilus* alpha-amylase and comprises a deletion of amino acids 180 and 181, using SEQ ID NO:3 for numbering, and wherein the variant has alpha-amylase activity.

149. (New.) A variant of a parent *Bacillus stearothermophilus* alpha-amylase, wherein the variant has an amino acid sequence which has at least 95% homology to the parent *Bacillus stearothermophilus* alpha-amylase and comprises a deletion of amino acids 180 and 181, using SEQ ID NO:3 for numbering, and wherein the variant has alpha-amylase activity.

150. (New.) A variant of a parent *Bacillus stearothermophilus* alpha-amylase, wherein the variant has an amino acid sequence which has at least 90% homology to the parent *Bacillus stearothermophilus* alpha-amylase and comprises a deletion of amino acids 179 and 181, using SEQ ID NO:3 for numbering, and wherein the variant has alpha-amylase activity.

151. (New.) A variant of a parent *Bacillus stearothermophilus* alpha-amylase, wherein the variant has an amino acid sequence which has at least 95% homology to the parent *Bacillus stearothermophilus* alpha-amylase and comprises a deletion of amino acids 179 and 181, using SEQ ID NO:3 for numbering, and wherein the variant has alpha-amylase activity.

152. (New.) A variant of a parent *Bacillus stearothermophilus* alpha-amylase, wherein the variant has an amino acid sequence which has at least 90% homology to the parent *Bacillus stearothermophilus* alpha-amylase and comprises a deletion of amino acids 179 and 182, using SEQ ID NO:3 for numbering, and wherein the variant has alpha-amylase activity.

153. (New.) A variant of a parent *Bacillus stearothermophilus* alpha-amylase, wherein the variant has an amino acid sequence which has at least 95% homology to the parent *Bacillus stearothermophilus* alpha-amylase and comprises a deletion of amino acids 179 and 182, using SEQ ID NO:3 for numbering, and wherein the variant has alpha-amylase activity.

154. (New.) A variant of a parent *Bacillus stearothermophilus* alpha-amylase, wherein the variant has an amino acid sequence which has at least 90% homology to the parent *Bacillus*

stearothermophilus alpha-amylase and comprises a deletion of amino acids 180 and 182, using SEQ ID NO:3 for numbering, and wherein the variant has alpha-amylase activity.

155. (New.) A variant of a parent *Bacillus stearothermophilus* alpha-amylase, wherein the variant has an amino acid sequence which has at least 95% homology to the parent *Bacillus stearothermophilus* alpha-amylase and comprises a deletion of amino acids 180 and 182, using SEQ ID NO:3 for numbering, and wherein the variant has alpha-amylase activity.